Claims:

1. A transmission system for transmitting data between a first communication point and a second communication point along a link, comprising:

a plurality of media converters included in the link, each of which comprises:

a first physical-layer interface to a first transmission medium;

a second physical-layer interface to a second transmission medium;

a memory connected between the first and second physical-layer interfaces, for temporarily storing data to be transferred between the first and second physical-layer interfaces; and

a media converter controller controlling such that, when a trigger signal has been received, a response block of data corresponding to the trigger signal is transmitted from a corresponding one of the first and second physical-layer interfaces back to a source that has transmitted the trigger signal; and

a test manager connected to one of the media converters, comprising:

an interface to a network manager; and

a test manager controller controlling such that a trigger

signal is transmitted to another media converter, and a location of a failure is determined depending on whether a response block of data is received from a corresponding media converter within a predetermined time period.

2. The transmission system according to claim 1, wherein the first communication point is one of a plurality of ports of a switch and the second communication point is a personal computer, wherein the test manager is connected to a media converter which is directly connected to the switch.

3. The transmission system according to claim 1, wherein the first communication point is one of a plurality of ports of a switch and the second communication point is a personal computer, wherein the test manager is implemented in a program-controlled processor of the switch to control a media converter which is directly connected to the switch.

4. The transmission system according to claim 1, wherein the test manager controller determines that a failure occurs at a location beyond the corresponding media converter when a response block of data is not received from a corresponding media converter within a predetermined time period.

5. The transmission system according to claim 1,

wherein each of the first and second physical-layer interfaces supports MII (Media Independent Interface) conforming to IEEE802.3 standards.

6. The transmission system according to claim 5, wherein the media converter controller accesses another one of the first and second physical-layer interfaces to acquire link information from the other physical-layer interface when the trigger signal has been received and generates the response block of data corresponding to the link information.

7. The transmission system according to claim 5, wherein the test manager controller disables the missing link state when a test is started and forces a corresponding physical-layer interface into transmittable state to transmit the block of data to the link.

8. The transmission system according to claim 5, wherein the media converter controller disables a missing link state when the trigger signal has been received, and transmits the response block of data to the source.

9. The transmission system according to claim 8, wherein when a received block of data is not a trigger signal under the missing link state, the media converter controller disables the missing link state to transfer the received block

of data to the other one of the first and second physical-layer interfaces.

10. A transmission system for transmitting data between a switching office and each of a plurality of subscriber devices, wherein the switching office comprises a switch having a plurality of ports corresponding to respective ones of the subscriber devices, wherein

the switching office further comprises:

a plurality of first media converters, each of which is connected to a different port of the switch at one end thereof through a metal cable and is connected to a different optical cable at the other end thereof; and

a test manager connected to each of the first media converters; and

each of the subscriber devices comprises:

a personal computer; and

a second media converter which is connected to the personal computer at one end thereof through a metal cable and is connected to a corresponding optical cable at the other end thereof,

wherein the test manager comprises:

an interface to a network manager; and

a test manager controller controlling each of the first media converters such that a trigger signal is transmitted to a corresponding second media converter, and a location of

a failure is determined depending on whether a response block of data is received from the corresponding second media converter within a predetermined time period, and

each of the second media converters comprises:

a first physical-layer interface to a metal cable;

a second physical-layer interface to an optical cable;

a memory connected between the first and second physical-layer interfaces, for temporarily storing data to be transferred between the first and second physical-layer interfaces; and

a media converter controller controlling such that, when the trigger signal has been received, a response block of data corresponding to the trigger signal is transmitted back to a corresponding first media converter that has transmitted the trigger signal.

11. A media converter for converting from one type of media to another, comprising:

first and second ports which are connected to the one type of media and the other type of media, respectively;

a packet buffer for storing a received packet; and

a controller controlling such that, when a link on the first port is disconnected, another link on the second port is kept in a connection state and a packet received through the second port is stored in the packet buffer.

12. A media converter for converting from one type of media to another, comprising:

a first physical-layer interface to a first transmission medium;

a second physical-layer interface to a second transmission medium;

a first memory connected between the first and second physical-layer interfaces, for temporarily storing data to be transferred between the first and second physical-layer interfaces;

a second memory included in at least one of the first and second physical-layer interfaces, for storing data received through a corresponding one of the first and second physical-layer interfaces; and

a controller controlling such that, when a link on one of the first and second physical-layer interfaces is disconnected, another link on the other one of the first and second physical-layer interfaces is kept in a connection state and data received through the other link is stored in the second memory.

13. The media converter according to claim 12, wherein each of the first and second physical-layer interfaces supports MII (Media Independent Interface) conforming to IEEE802.3 standards.

14. The media converter according to claim 12, wherein the controller further accesses the one of the first and second physical-layer interfaces to acquire link information and transmits the link information through the other one of the first and second physical-layer interfaces.

15. The media converter according to claim 12, wherein the controller further accesses the second memory to read the stored data when the link on the one of the first and second physical-layer interfaces has been restored, and transmits the stored data through the one of the first and second physical-layer interfaces.

16. A control method for a media converter for converting from one type of media to another, wherein the media converter comprises:

a first physical-layer interface to a first transmission medium;

a second physical-layer interface to a second transmission medium;

a first memory connected between the first and second physical-layer interfaces, for temporarily storing data to be transferred between the first and second physical-layer interfaces; and

a second memory included in at least one of the first and second physical-layer interfaces, for storing data received

through a corresponding one of the first and second physical-layer interfaces,

the control method comprising the steps of:

a) monitoring the first and second physical-layer interfaces to determine whether a link is disconnected;

b) when a link on one of the first and second physical-layer interfaces is disconnected, keeping another link on the other one of the first and second physical-layer interfaces in a connection state;

c) when data has been received through the other link on the other one of the first and second physical-layer interfaces, storing the received data in the second memory.

17. The control method according to claim 16, further comprising the steps of:

d) accessing the one of the first and second physical-layer interfaces to acquire link information in response to a link information request received from outside; and

e) transmitting the link information in a predetermined signal format through the other one of the first and second physical-layer interfaces.

18. The control method according to claim 16, further comprising the steps of:

f) when the link on the one of the first and second

physical-layer interfaces has been restored, accessing the second memory to read the stored data; and

g) transmitting the stored data through the one of the first and second physical-layer interfaces.

19. A transmission system comprising:

first end device and second end device which are connected to each other by a link through a plurality of media converters, wherein at least one of the media converters comprises a packet buffer for storing a received packet, wherein the packet buffer divides the link into a first collision domain of the first end device and a second collision domain of the second end device.

20. The transmission system according to claim 19, wherein said least one of the media converters further comprises a controller controlling such that, when a link on one port thereof is disconnected, another link on the other port is kept in a connection state and a packet received through the second port is stored in the packet buffer.

21. The transmission system according to claim 19, wherein when one of the first and second collision domains becomes in a link disconnection state, the other one of the first and second collision domains is kept in a link connection state and normal communication is performed between a media converter

and a corresponding end device in the other one of the first and second collision domains.

22. A transmission system comprising:

a first media converter installed in a subscriber house; and

a second media converter installed in a switching office, wherein the second media converter is connected to the first media converter by an optical fiber cable,

wherein the first media converter comprises a packet buffer for storing a received packet, wherein a missing link function is released to keep a link to the switching office in a connection state regardless of a state of a link to the subscriber house.